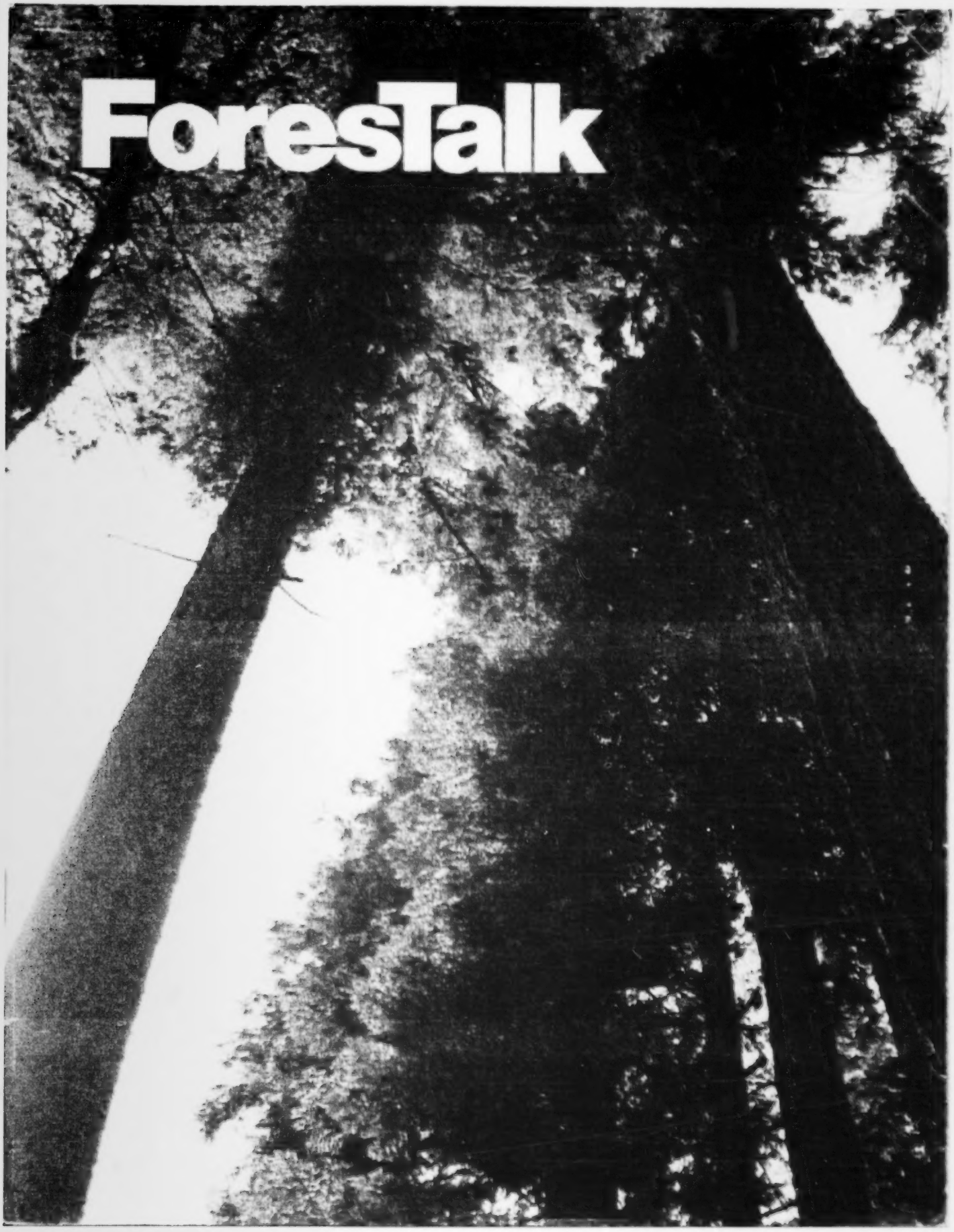
ForesTalk



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This is the first issue of the new ForesTalk. It is designed to encourage public awareness of resource management in British Columbia.

Since you have indicated your interest in receiving British Columbia resource news and information, you will receive ForesTalk on a regular basis, without charge. Its contents will depend greatly on your response to articles and your suggestions for topics or issues you would like us to cover.

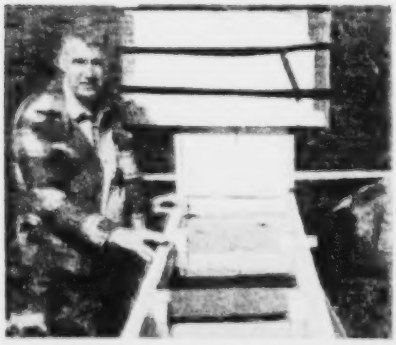
Future issues will feature letters to the editor and information concerning where and how to find answers to your questions.

We hope you will enjoy this and ensuing issues and look forward to hearing your views concerning contents and directions.

The Sayward Forest

Planning and Forest Management

The Benefits of Planning



People Make the Difference

Wilderness Recreation Sites

ForesTalk

Fall/Winter 1976 Volume 1 Number 1

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The Sayward Forest

by **Ray Wormald**

"And that," explained the man in charge, "we'll probably leave for the woodpeckers."

He was studying a huge snag — all that was left of what must have been a giant among giants in a Douglas-fir stand of long ago. It stood 25, maybe 30 feet and was about six feet across at the ground. Its thick coat of bark was long gone and in its place were dozens of large holes left by sharp-billed woodpeckers in search of insects and grubs.

All part of nature's scheme of things. Unchecked, those insects can destroy a forest. Valuable species, those woodpeckers. And there are those who properly believe those birds have a rightful place in the forest.

This, in large measure, is symbolic of probably the largest all-embracing plan ever considered for a specific forest anywhere in British Columbia.

The area in question is the Sayward Forest — nearly a quarter of a million acres of lush forest land which rises and dips in the heart of Vancouver Island.

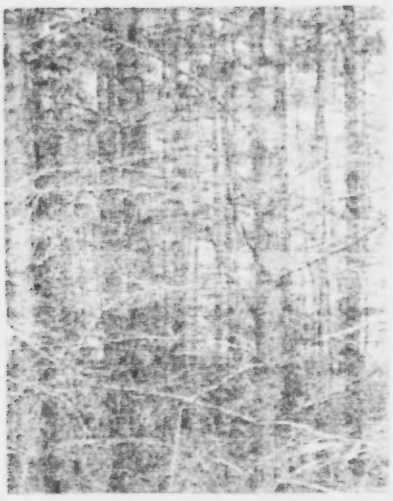
It wasn't always this way . . . 38 years ago 75,000 of its acres were reduced to ashes in the wake of what remains the largest single forest fire ever to strike Vancouver Island. At the height of the inferno, smoke and ashes darkened the sky as far south as Portland, Oregon, and some spots were still smouldering a year after the fire started.

In one respect, the "Big Fire" was a good thing. It provided a starting point for a new managed forest.

The first step in that planning process, quite logically, was a replanting program. For several years after the big blaze, millions of seedlings were hand-planted over the burned land.

The young trees fared well and the mortality rate was low. They flourished in a land obviously very suitable because of topography, rain, and a host of other good forest growing conditions.

Forests can become choked with their own growth resulting in less overall volume, and loss of movement for both humans and wildlife. The Sayward thinning will relieve these problems.



Today vast areas of the Sayward Forest are so thick with trees a person can barely make his way through them. Neither can deer and other wildlife. This tree congestion, with the resultant slowdown in growth, is among the many problems being tackled by a special committee charged with formulating a master management plan for the forest. Working with the group are provincial and federal forestry personnel, representatives of the Fish and Wildlife Branch and various other land-use agencies.

Co-ordinating the group is Paul Diggle, attached to the Special Studies Division of the B. C. Forest Service—a man well qualified for the job. He holds university degrees in forestry, zoology and botany, and has had intensive forest management and research experience in New Zealand and with the Canadian Forestry Service. He joined the B. C. Forest Service in June of 1977.

Here is a member of the "new breed" of forester who realizes that today the role of the woods manager goes far beyond merely providing logs for sawmills. And a man who believes the most practical way of solving a problem is to tackle the job head-on.

"Over the years," he observes, "there has been a lot of studying but very little done."

With regard to thinning requirements in the forest he feels "we're 15 or 20 years late already."

In large measure the Sayward Forest planning procedure will have to cope with results of past policies and procedures which are no longer considered valid. There's no doubt the planting program which followed the Big Fire was "overdone". Far too many trees were planted. At the time, planting trees at six-foot spacing intervals was considered correct, resulting in about 1,200 trees per acre. Time and experience, however, have shown that best results will be obtained by planting only 300 to 400 trees per acre.

The greatly increased cost of that overplanting is now realized. Initially there was the cost of growing and planting the extra seedlings. Then there is the additional expense of reducing those overstocked stands to a desirable density. And less obvious but still significant, the cost (the word "loss" may be more appropriate) in terms of slowed-down growth of merchantable timber.

Another vital consideration in the plan, observes Forester Diggle, is the fact that although the forest is a renewable natural resource, it is by no means always self-renewing.

But better late than never. A thinning start was made on the program last summer when about 20 high school and university students thinned approximately 110 acres. When they started there were about 1,000 trees per acre up to 60 feet in height. When they had finished there were 150. With space to breathe and expand those remaining will grow faster and larger.

How successful will the project be? Only time will tell. Up to five years may be required before actual economic values of the thinning program will be apparent.

The trees cut down were not large enough to be of commercial value and were left on the ground — in the words of the planners "to return additional nutrients to the ground." Even this presents yet another problem: other foresters, particularly those concerned with the protection of timber, are fearful the downed and dead trees will become a potential fire hazard. This risk, they point out, is particularly high in view of the large number of people who visit the Sayward for recreational purposes.

In areas where trees are larger they will be thinned by private contractors.

As Paul Diggle points out, this is merely a beginning in the overall plan for the Sayward Forest. And even this small start has had its full share of problems and frustrations. There aren't enough people to do the work. There is no assurance there will be sufficient funds available. When commercial thinning gets underway, will there be a market for the timber?

On top of all of this, inventories of the Sayward and everything within it are sadly outdated and considered totally inadequate for today's forest management standards. The planners are working with inventory data compiled 10 or more years ago . . . a time when such data concerned itself almost exclusively with the harvest of mature timber. As the saying goes, it's a brand new ball game today.

The Sayward is literally laced with roads, mostly to logging standards. No one, it seems, knows precisely how many miles of road actually exist there. There are many important but as-yet unknown factors: soil qualities, growth patterns, bird and wildlife populations, new road requirements, timber thinning procedures, the need for reforestation in some regions. The list goes on.

Some members of the planning group question the whole approach to the economics of this and other forest management projects. Over the years, they point out, great volumes of timber have been harvested in the Sayward Forest. It was designated as a provincial forest in 1928 but logging operations actually started in 1889. They feel a practical portion of the

proceeds from those harvest sales should be "re-invested" in the area — on reforestation, site preparation, roads and other related developments.

But such has not been the case. Such proceeds go into "general revenue" of the province. Budget allotments for the Forest Service are approved by the Legislature on a year-to-year basis; and this, in turn, can make long-term planning difficult.

In addition to the present and potential timber supply the Sayward has an equally important value as a recreation area. In many ways it is an outdoorsman's paradise . . . whether he be boatsman, hunter, fisherman, hiker, camper, or whatever. With predictions that Vancouver Island's population will more than double within the next 25 years, there's no doubt the forest will attract more and more recreationists with each passing year.

Several years ago the Forest Service launched its own recreation program, including the establishment of a few widely scattered "rustic" campsites — nothing more than clearings on lake shores, with picnic tables, open-pit fireplaces, garbage cans and outhouses.

The sites were instantly popular. Last year, reports Recreation Forester Harry Marshall, some 74,000 people visited the forest's 25 campsites. Seventeen more such sites are being planned.

With about 25 lakes ranging in size from 100 to 2,500 acres, together with literally hundreds of ponds, the Sayward is a fisherman's dream.

Last year alone, reports George Reid, Fish and Wildlife regional fisheries biologist, nearly 108,000 man-days were spent angling in the area. Lakes of the forest provide some of the most productive fishing in the province, but the trout are small. Plans call for extensive fertilization of many of the lakes in an effort to produce more foodstuff for the fish.

Before large areas of the forest became dense, they were home for great numbers of deer and grouse — an extremely productive region for hunters. New management plans will take this into consideration. Within the forest's boundaries are also Roosevelt elk, cougars, black bear, mink, marten and racoons. Wildlife people say there are even wolves there.

The many lakes in the Sayward are popular with vacationers.

Training is now carried out by students shown here learning some of the first points of falling from their supervisor.

In the past, the same sources claim, planning for fish, animals and birdlife in the forest involved merely managing "what was left over" after timber harvesting. Such values will be seriously considered in the formulation of new management plans.

In addition, the Sayward Forest is a vital watershed region. Elk Falls, in the southeast corner, is the site of the large John Hart hydro-electric development which serves the entire Campbell River area — and undoubtedly an even greater coverage in coming years as populations increase.

Forester Diggle and his colleagues are giving themselves three years to come up with a detailed management plan.

They have tackled a formidable task. And their success or otherwise will depend largely on the support they receive from those they hope to help — the people of British Columbia.

Planning and Forest Management

by Gerry Graham

You can find as many opinions and facts about how our forest resources are managed in British Columbia as you can sources on the subject. Foresters like to tell you that the harvesting of a crop of trees is like harvesting wheat except that faults in the harvesting method may take much longer to discover in forestry than in farming. They also will tell you that the days when the approach to managing the forest land base in this province was to take and keep taking are now over.

The public generally has become more aware of the consequences of faulty resource management and are not timid about making this awareness felt. A good thing if you happen to be concerned about British Columbia's wildlife or if you own a cattle ranch, or perhaps have an interest in a particular river. But to some the advent of this new awareness means increased costs and time. A factor all operators and resource departments have had to accept is that working towards a healthy environment costs money. But it also means assurance of continuing forest benefits in the future.

In the British Columbia Forest Service and other public resource agencies, attitudes and methods have had to adjust and are still in the process of adjustment. This brings about new problems and new answers and has opened a whole new aspect of forest land management: planning.

MULTIPLE USE MEANS MULTIPLE PROBLEMS

Planning is the essence of good forest land management. The Forest Service has adopted a recent policy of integrated resource use on forest lands and all factors are considered before approving any use of a given area. But there is a greater variation of climate, biological make-up and geography in British Columbia than in the rest of Canada combined, making the task of planning even more difficult.

To accommodate this situation, the province is broken down into six major districts. Each district has a head office and a complete organization to deal with its particular set of circumstances. The districts are broken down even further into smaller land units called Public Sustained Yield Units and Tree Farm Licences.

The former are managed and administered by the Forest Service and harvesting or other use is allowed through licensing. Tree Farm Licences are land units where the responsibility for protection and management is taken by industry. In both cases, responsibility for supervision and monitoring the operations lies mainly with the Ranger's office. By breaking the province down into such small land units, better management of the resource can be effected.

The planning process brings together resource managers in order that they can familiarize each other with the intentions and problems each might have based on the overall intended use. This helps to achieve a more balanced use.

AN EXAMPLE

Other benefits can be achieved through this approach. One example can be found near Kimberley where a program is now under way to thin forests on the St. Marys Prairie to create better domestic grazing.

There are many positive side effects of this program. The thinning will open up the forests to allow better movement of cattle and better quality forage. Wildlife corridors are created, as well as better habitat. Burning off the accumulation of forest debris will decrease the likelihood of uncontrolled fires; there will be less competition between individual trees allowing better growth for the ones left; recreation will be available and local employment is enhanced. Now in its third year, this project involves ranchers, fish and wildlife officers, foresters, industry representatives, agrologists and others.

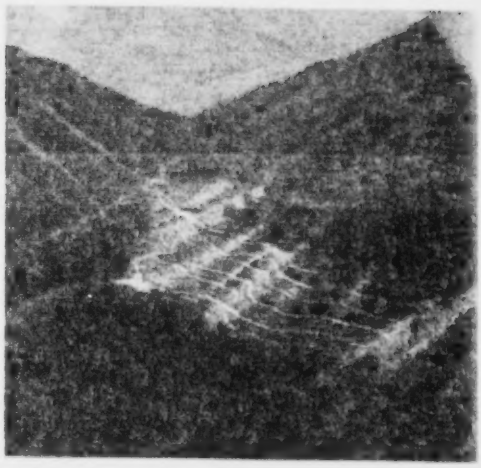
INVENTORY AND DISCUSSIONS

When plans are to be considered, a certain number of steps are taken to form background information essential to intelligent decisions. To begin with, an inventory must be taken to assess the soils, water values, timber, wildlife and fish habitats, recreation, agriculture, grazing and mining values. This inventory is essential in forming a complete knowledge of what exists within the area in question and whether its capabilities are in keeping with the needs. And these needs can range from a fish hatchery to a complete logging show and everything in between. An excellent paper on this subject titled 'All Resources Considered' is available free from the British Columbia Forest Service, Information Division, 31-525 Superior Street, Victoria, B.C. V8V 1X5.

After inventory is taken, discussion concerning the application of the proposed plan takes place. This aspect often provokes healthy encounters between resource managers and users. Perhaps there are too many factors for one use leaving the group with the arduous task of working out agreements for and against mixed uses or alternates in the original plans. For example, if the logging road is also used by ungulates, then in winter when the trucks travel on the road, the animals may not be able to clear the high snow banks and will run to death in an attempt to escape. Therefore, some solution must be found to accommodate the two users. The situation here could bring long and drawn out discussions, but the problem must eventually be worked out. This is a very over simplified version of how this process works. There are many other details involved which affect road construction, bridges, the calculations needed to arrive at an allowable annual cut when harvesting the trees, reforestation problems, and others all related to the on-going management of forest lands.

Many disciplines are applied to the planning and application of resource

Planning must accommodate the many demands our way of life places on forest lands.



management. The underlying objective is to provide a perpetual yield of forest products to meet our economic needs and to provide healthy forest lands to meet the needs of society on a local and broad basis.

THE WINDERMERE EXAMPLE

The Windermere Public Sustained Yield Unit is located in the Rocky Mountain Trench near the B.C.-Alberta border.

The problems of administering and planning for this unit are complicated by its very location. There are over 100 different types of soil to contend with and the landscape ranges from range land to mountains on either side of the Trench. The land is never really too level at any particular point adding to the task of management and planning because some of the best stands of trees are on steeper slopes and at higher altitudes. This means that there are soil erosion and regeneration problems to consider. Because of the mountainous nature of this unit, operators are required to move their operations to the valleys from the higher areas during the winter because they leave high stumps in the deeper mountain snow. Therefore, winter logging areas must be found and the planning process becomes more complicated.

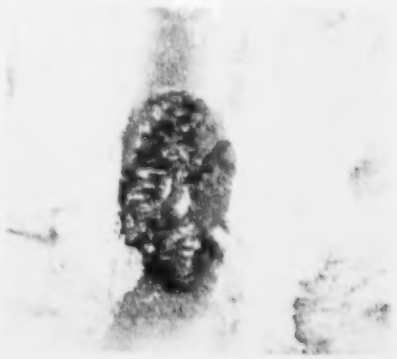
In this Public Sustained Yield Unit an advisory committee was formed to study and make recommendations on multiple use. One of the main objectives of establishing the working committee was to find as broad a representation as possible to pursue the best answers. But the group had to be kept to a limited membership in order that the whole process did not become cumbersome. Three main divisions were then decided on as representation: government resource departments, the forest industry and non-industry forest interest groups. The committee added a further stipulation that members must reside and work within proximity of the land unit.

Essentially, this group had as its task the establishment of an allowable cut in the forest industry which would take all needs into consideration including environmental constraints, other resource values and land use situations. The final representation was made up of the following:

- B.C. Forest Service
- Fish and Wildlife Branch
- Parks Branch
- B.C. Water Resources Branch
- Regional District of East Kootenay
- Crestbrook Forest Industries
- Revelstoke Sawmill (Radium) Ltd.
- International Woodworkers of America
- Columbia River Sportsmen
- Columbia Valley Guides and Outfitters Association
- Windermere District Farmers Institute
- Lake Windermere Valley Naturalists
- Invermere Chamber of Commerce

The group discussed the principles of sustained yield in forest management and the concepts of integrated use. They studied maps and air photos, and discussions took place pertaining to the following subjects: soil sensitivity, resource management, recreation sensitivity and wildlife needs.

After a number of meetings and visits to various sites, the Forest Service presented a final set of maps to the group outlining the resource management intentions and the constraints outlined and agreed upon by the group. However, since this was one of the first projects of its type, there were some problems in achieving final approval due to subjective problems in the form of resource losses from fire, insect kill, potential agricultural needs and future single use land alienation resulting from the establishment of projects such as ecological reserves or parks. There would also be further problems with wood supply based on interpretation of inventories and other technical problems. But the group decided to meet annually to deal with needs and problems arising from this approach.



Every year, British Columbia loses an average of 1.3 million cubic feet of lodgepole pine to the mountain pine beetle. The only way to effectively stop this silent killer is by removing the affected trees, thus reshaping the original inventory and development philosophy.

ORIGINAL OBJECTIVES

It is obvious in many parts of the province that this approach does not represent the final word in resource management. The idea behind the management of a Public Sustained Yield Unit when first recommended by the Sloan Commission in 1945, was and still is, to establish some stability for the forest industry and communities. However, since then, political considerations, good and bad markets, planning problems involving some hydro dams, pressure group considerations, expanding populations, expansion in industry, and certain resource value trade-offs and compromises, have all interacted with the overall management plan. As well, new technology through research has helped to change some objectives.

MORE EXPERIENCE ON THE COAST

Another way of attacking the problem of resource development was developed on the west coast of Vancouver Island in 1972 using the Toquart River watershed. This particular area was chosen for the study because it had little or no development in the past and ideally contained an extensive cross section of soils, terrain, vegetation, waterways, wildlife and other resources. The objective was to develop a model applicable throughout the Vancouver Forest District that would, through collection and application of data, determine the effects of one resource use on another resource base.

This approach was used by MacMillan Bloedel on the Nanmint River watershed which is part of a Tree Farm Licence on the west coast of

input through planning committees and the public has resulted in the development of better environmental restraints like this leave strip designed to protect water quality.

Vancouver Island. This study involved participants from the Department of Environment Canada and the provincial departments of Agriculture, Water Resources and the Forest Service, Mines and Petroleum Resources, Fish and Wildlife Branch, Parks Branch, and the Environment and Land Use Committee Secretariat. Included in the study was the University of British Columbia and MacMillan Bloedel.

The study was developed and conducted with extensive co-operation by all parties involved and after they reviewed all the resource values and potential uses they found three major values which dominated the area. These are fisheries and timber resources, and a combination of factors providing a high potential for recreation. In fact, the recreation values were so predominant that the group considered a recommendation that the watershed be used strictly as a recreation area and possibly even as a park. However, this was outside their stated terms of reference: "that of superimposing an acceptable pattern and level of logging on a compromised composite base of all other resource uses."

Because of this multiple use base, the study group recommended emphasis on environmental protection to protect rivers, lakes and other recreation and wildlife habitat during logging. Also discovered and recommended was the fact that logging in some areas would enhance certain wildlife habitat and would attract new wildlife to the area.

As a result, the study and report are responsible for the recommendations of tighter aesthetic and environmental protection regulations during and after logging and careful monitoring of the operations by government agencies.

COMMUNICATION IS ESSENTIAL

Approaches taken in British Columbia to plan and operate the extraction of our natural resources are the responsibility of the federal and provincial resource agencies and industry. They are the ones involved on a daily basis and should know the problems on a very intimate level. This does not mean that members of the public can sit back with the excuse that things are and will be accomplished by governments and industry. An attitude of public apathy will only result in an ignorance of what is going on around us. This leads to potential problems of lack of communication between society's needs and what managers think those needs are.

As long as we continue to grow and develop as a society, the objectives of our resource management will change leaving yesterday's plans by the wayside. Another problem is that the public resource agencies are faced with a huge job and many still maintain the age old need for more people to do the job properly. Just drop into a Forest Service office and ask about forest resource management problems and be prepared to sit down for quite a session.

What we have achieved so far is a form of identifying the level of management needed within a certain land unit and from that point on the task is to keep up with the needs. In Smithers last summer the Forest Service included public meetings in the planning process, a point which was quite contentious in the past but not approached due to lack of staff and other problems. More input means a better informed public but it means that the plans become more involved and the results more critical. If the results are not achieved, the plan needs more revision. Hopefully this will bring more effective management in the future with greater benefits for everyone.

The Benefits of Planning

Wood chips for paper manufacture

Illustrating needs with maps

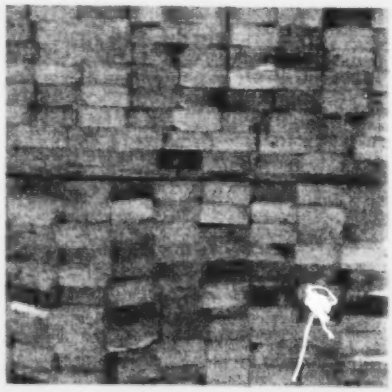
Soil improvement

Each day just about everyone in British Columbia is affected by the forests or the forest industry. Our forests supply lumber and wood products for everything from construction to sports equipment. Newsprint, fine papers and cardboard products come to mind, but there are other less obvious items such as charcoal, dyes, cellophane, anti-freeze, rayon, vinegar, many drugs, and even vanilla ice cream all using wood based products in their manufacture.

The forests supply British Columbians with jobs, scenery, recreational opportunities, and wildlife habitat. Our water is protected by the shade and soil retaining abilities of the forests. On the coast, our fishing industry depends on these protected watersheds to produce a continuing supply for their nets.

Planning and management provide a co-operative effort by many provincial and federal resource agencies together with the forest industry, community groups, ranchers, municipalities and other involved individuals. This effort results in a multiple use system aimed at accommodating all users of the forest lands.

Site inspection

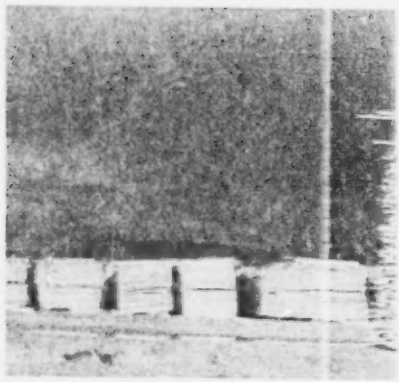


Ready for market

Cutting fence posts

A fierce enemy

Wood is used in construction



Waiting for the train

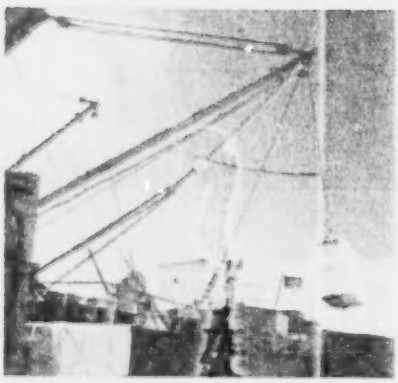
Collecting data

Recreation

Tranquil scene

Harvesting the crop

Planting a new crop



Pulp on its way to Forrest

People Make the Difference

By Len Webster

Imagination, enthusiasm and scads of volunteer labour have helped save several Vancouver Island salmon spawning grounds threatened with virtual extinction.

Under the auspices of the Amalgamated Conservation Society of Victoria the projects have been co-ordinated by Howard English, Hon. President of the Victoria Fish and Game Protective Association, member of many conservation organizations and advisor on fish and wildlife to government. A retired farmer, Mr. English has a refreshingly different approach to most problems. He believes the solution to most difficulties lies in helping people help themselves, that funds should be the lubricant of effort, not the stimulus.

He applied this somewhat unique philosophy when the A.C.S. decided to do something about the depleted numbers of salmon fry being bred in several streams on the southern part of the Island. Confirmed by actual counts taken on several control sections of the streams, the number of fry surviving annual winter flooding of the streams, and the number of mature fish returning to spawn were dwindling to alarming levels. In one

The Amalgamated Conservation Society of Victoria, B.C., is made up of the following groups: The Victoria Fish and Game Protective Association; Royal Canadian Navy Anglers Association; South Vancouver Island Rangers; Victoria-Saanich Inlet Anglers Association; Pacific Trollers Association; Victoria Canoe Club; Esquimalt Anglers Association. The president of the society is Brian English who is totally involved in the project.

Students on some of the stream improvement projects were from Victoria high schools and from the University of Victoria.

Agencies working with the A.C.S. include: Provincial Fish and Wildlife Branch; Provincial Parks Branch; Provincial Water Resources Service; Federal Fisheries and Marine Service; and the Greater Victoria Water Board.

year, for instance, the total number of returning spawners was so low that propagation of the species during that season on the stream was severely threatened.

The technical solution to the problem had three aspects: increase the total number of fry in each season; improve and develop natural spawning grounds; and improve the quality of the fry up to the time they leave for the open sea.

Implementing those solutions was another thing, and it was then that Howard English's different approach came into play.

Through various federal and provincial agencies, limited funds and grants were obtained, together with valuable technical help. However, there was never enough money available to actually pay for complete projects. Surveys would identify stream and bank areas in need of maintenance and repair, but money was not available to actually move the logs or clear the weeds. Research indicated that a limited but continuous program of fry feeding would show substantial yield in fry growth and survival, but there were no funds to pay workers to do the feeding.

And in any case, another aspect of Howard English's thinking is that no on-going program should be dependent on money alone — because such sources have a habit of drying up.

As a result the A.C.S. decided to draw on the large membership of its combined organizations and set up self-help programs fueled by volunteer labour. Later this concept was broadened to include community

groups as well as schools and interested citizens.

The work got underway in 1971, and for that first year a major part of the program was funded through an Opportunities For Youth grant. Four separate activities were undertaken: planting of fir and willow trees for stream and bank improvement; the salvage of some 130,000 fry from various streams and lakes, the fry being taken from ponds which subsequently dried up; the supplementary feeding of fry; and an inventory of the Sooke River to assess its potential for coho spawning and rearing.

Each of these segments has since been developed into major and on-going projects kept alive by hundreds of volunteers who contribute thousands of work hours each year.

Stream improvement is now aimed at improving or creating side channels as natural spawning areas with upstream protection designed to prevent washout of the fertilized eggs during winter flooding. Much of this work is done by students and with the co-operation of provincial and federal agencies has resulted in some startling increases in fry counts. In one section of the Goldstream River, for instance, the summer fry count which in 1972 was 600, totalled 10,000 in 1975.

The salvage of fry, while continuing, has largely been replaced by a technique of artificially incubating eggs and the subsequent release of fry to the native streams. For this the A.C.S. has developed an incubation box (cost approximately $300) in which they hatch upwards of 50,000 eggs per season. The roe is taken from fish removed from the downstream spawning ground. This is then fertilized just before being placed in the incubator with milt taken from male salmon that are then returned to the stream.

Divided into three compartments, the incubators consist of beds of gravel supported on a grid made up of 1-in. by 1-in. slats. Water drawn from upstream of the site is passed through the box at a constant 7.5 gallons per minute and is discharged back to the stream.

Packing the incubator with fertilized eggs follows a precise pattern with 6,000 eggs distributed over the three compartments in each of eight layers, separated by a 2-in. depth of gravel. In this way the eggs are placed in much the way they would be found in a redd — the term used for an area of gravel stream bottom selected by salmon for spawning.

The eggs hatch to a schedule governed by the total accumulated heat and, because the water flowing

through the incubator is drawn from the native stream and is maintained at a constant rate, the development of the eggs follows exactly the pattern of those laid down in natural redds on the spawning grounds.

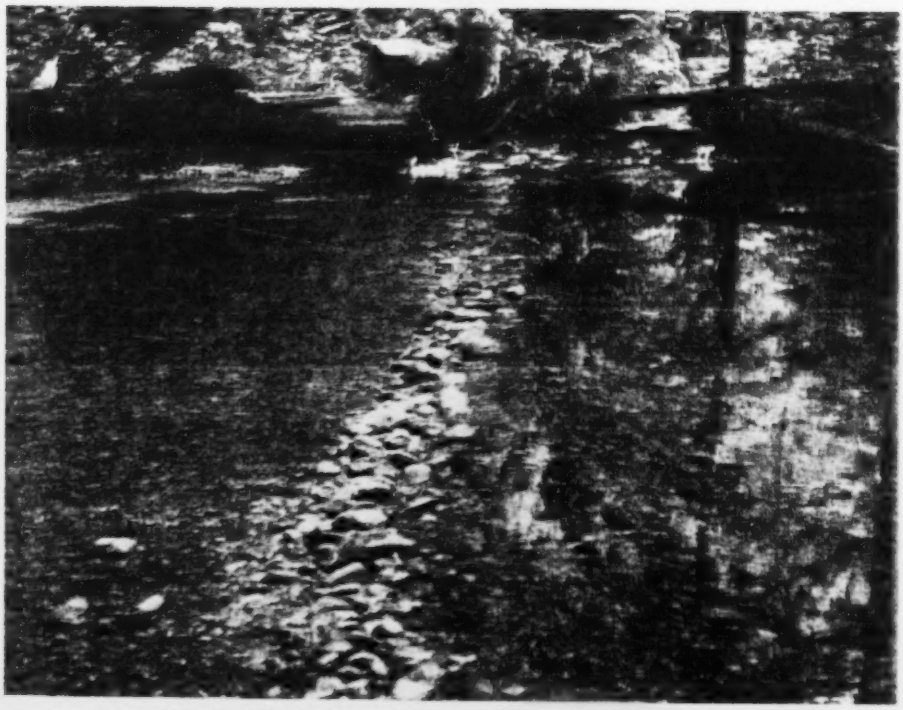
When first hatched, the alevins tend to burrow down into the gravel but, as they develop, reach a stage (called 'buttoning-up') when they head for the light and rise to the surface of the incubator. This is the transitional stage when the alevin becomes a fry and it is then that the A.C.S. volunteers collect them as they are washed out of the incubator and transport them back downstream to be released on the natural spawning grounds.

The first of these incubators developed by the A.C.S. is still in use and is sited below the Japan Lake Reservoir on the Goldstream on property managed by the Greater Victoria Water District. Another incubator has been developed on the Many Vine Creek, west of Victoria.

Supplementing this technique are projects aimed at developing side channels for natural spawning and rearing of fry. At these sites, supplementary feeding of the fry is being carried out throughout the summer and fall. Results of this work give hope of significantly improved numbers of spawners returning to the streams in future years.

Again it is the volunteers that are donating hundreds of work hours to maintain the feeding program. The actual technique is simple and takes only a few minutes a day at any one location. The idea is to enrich the fry's

Howard English (left) explains functions of the incubator in which up to 50,000 salmon eggs are hatched each year.



Stone dams built by student volunteers have greatly increased the survival of the salmon fry. In 1972, before damming, this pool yielded 600 fry; in 1975 by building this dam the same pool held 30,000.

diet, not to replace natural feeding — although the fry soon learn where the good stuff comes from and will swarm at the bank when a volunteer feeder appears.

Results of this program are impressive. In 1974, for instance, measurements of Goldstream fed and unfed fry indicated 67% of the fed fry showed a significant improvement in growth. This was reckoned to appreciably increase their survival rate.

In actual figures, 60% of the unfed fry were under 5.4 cm in length compared to only 15% of the fed fry; in the lower growth range feeding significantly improved the growth of 45% of the fry; 22% of the fed fry were over 6.7 cm long compared to 0% of the unfed fry.

In a report on the fry feeding program prepared by independent consultants it was stated that "... the biomass at the end of the summer (in DeMamiel Creek) is approximately twice that found in the unfed sections. This indicates that the supplementary feeding supplies approximately 50% of the total nutrient energy intake of the fed fish. Recent data from the Nanaimo Biological Station indicate that besides the direct effects of the feeding program, an enhancement of natural feeds, particularly insect larvae, can be expected to occur due to the nutrients added to the stream in the form of undigested and uneaten fish feed."

The most recent project launched by the A.C.S. is in the Sooke area where swamp clearing, stream improvement, fry feeding and other conservation work is underway by volunteers from clubs, local groups, students, and people from throughout the area. Again the Amalgamated Conservation Society is co-ordinating the effort which is intended to take advantage of a dam built on the Sooke River.

According to Howard English, who is quick to acknowledge there are many club members, as well as those representing federal and provincial agencies who are putting in long hours keeping the various projects running, the key to the whole exercise is having people assist in building their local resources. This is something he feels should be encouraged everywhere — and he is convinced that there is absolutely no shortage of volunteers to make the projects work.

"When people are given a suitable opportunity to put their shoulder to the environmental wheel," he says, "they get jobs done that would otherwise not yet be done — in matters they are deeply concerned with, in a way they are willing to contribute." ◻

Wilderness Recreation Sites

by Gord Price

There are over 900 of them out there, spread over 130 million acres of Crown forest land, joined by thousands of miles of backroads, but not marked on any map. By the end of 1976 they'll have been visited, in that year alone, by almost one million people, and will have proven to them, better than any speech or argument, the value of a multiple-use policy for the forest lands of British Columbia.

They're the Forest Service recreation sites — usually small, simple, with minimum improvements, and exactly where the public wants them, according to Harry Marshall, the recreation forester for the department, because it was the public that chose them.

"Where people go is the best way of finding out where the recreation values are. Over the years, recreationists of all kinds have found the accesses along logging roads, driven there in a variety of machines, found the best fishing holes, the best trails, the most scenic camps and the best sites compared to the next ten choices around. It's a form of natural selection, and we just had to find out where they were."

But up until 1970, the Forest Service was not involved in outdoor recreation on Crown forest land. There was a parks division in the department before 1956, but in that year it was reassigned to another ministry, currently Recreation and Conservation, and given management of the ten million acres (as of July, 1976) of single-use, gazetted parks. That left some 130 million acres of forest land in a recreational vacuum, that eventually had to be filled.

The leisure boom was on. People were pouring out of the cities in all different types of motorized vehicles, during summer and winter, heading for anywhere within about 200 miles that offered tranquility, a contrast to the city, and an opportunity to swim, hike, canoe, ski or just plain relax.

But with them came problems. Fire. Accidents and overuse on logging roads not designed for the public. Pollution and litter. Vandalism and damage to trees. Conflicts of interest and activities between industry and recreationists, and, increasingly, between recreationists and recreationists. A study was authorized in 1969 that led eventually to a new section in the Management Division (later

Resource Planning) named, appropriately, Recreation.

With only one staff member, Harry Marshall, the fledgling section wasn't about to compete with the expertise and goals of the then Recreation and Conservation department, but its own priorities were clear. "We knew from the beginning," explains Marshall, "that we wouldn't have the time, money or staff to shotgun the whole range of activities, so we narrowed our target to give first priority to the existing sites that were causing problems in the 'intermediate-range' forests — those with logging road and water access, but not served by public highways. We wanted to ensure that money wouldn't be wasted on something the public wouldn't use fully, and we knew enough of them had a good eye for the country to make the right choices" — but what were they?

The right answers were known by the field staff in the 99 Forest Service ranger districts — over 800 men — who spend a great deal of their time in the woods and are extremely knowledgeable about public use and activities there. So Marshall spent much of 1970 touring the province, asking questions and building the answers into a provincial pattern.

"Multiple use is the main plank in our platform, with the emphasis on "use". This type of planning is difficult since you've got to accommodate so many varying demands on the same resource base; but if it's well done there's a consensus and a balance of tradeoffs."

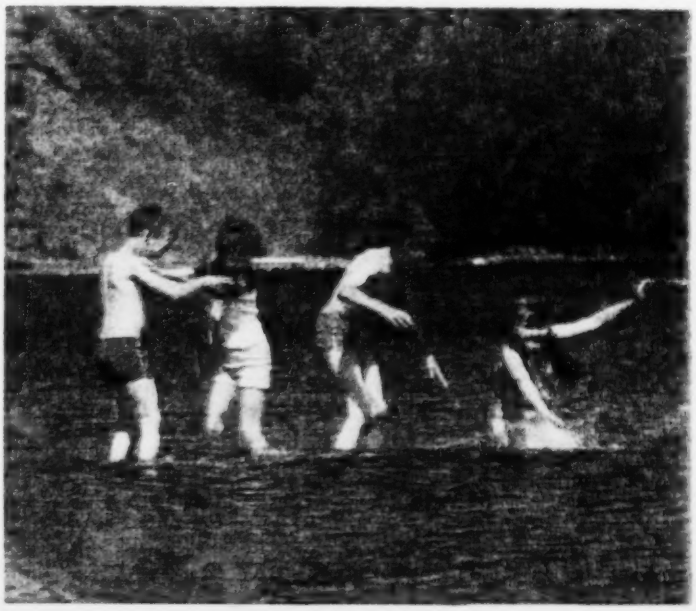
So now, in planning use of the total forest, not only is the recreation component considered but recognition is given also to aesthetics, landscape management and access. That last one is important, for without access there's no forest recreation; and many an outdoorsman can remember the frustration of a padlocked gate across a logging road on Crown land. Now the Forest Service is concerned with directional signing, safety — and securing that right-of-way for the public, even through private lands.

The Forest Service provides the sites, the tables, the boat launches and the sanitation services, but they're not in competition with the Parks Branch when it comes to nature talks, displays and sophisticated facilities.

"So long as the scenery is 'clean and natural', our strata of users like things just the way they are, so they tell us. We offer a low level of facilities, but we don't charge (it would probably cost more to collect fees than we'd get) — and since it is mainly provincial residents who use our sites, we feel they've already paid through taxes. Nowadays people can bring whatever improvements they want in their campers and trailers."

By far the majority of users are local residents of towns and cities within one or two hour's drive of the recreation sites, with a heavy proportion of families out for a picnic, some boating or light camping. At the other end of the spectrum are young, active wilderness users, expending large amounts of physical energy on hiking, mountain climbing, skiing and canoeing. Then there are seasonal groups, like hunters and fishermen, who are mainly males from a range of age groups.

The more popular and heaviest used Forest Service sites are in the second-growth forests where recreation patterns have been established for many years — Cowichan and Sayward on Vancouver Island, the Merritt and 100 Mile Plateaus in the Interior, the Aberdeen Lakes area in the Okanagan, the Elko region of the East Kootenays, Tabor Mountain near Prince George, and the Bulkley Valley in the



The sites are sparsely developed and equipped leaving campers to their own devices in the way of comfort. Winter use of crown lands for recreation has increased tremendously over the past few years adding to the popularity of the sites.

northwest — and, as witnessed by the clusters of red pins on the map in Marshall's office, this is where most of the 925 campsites are.

The fact that the Forest Service is beginning to think more about future plans and sites is evidence that Phase I of the program is almost complete and the existing problem dealt with. By the end of next year, the program will probably have broken through two barriers — over 1,000 recreation sites will be established, serving over one million visitors annually. And that will have been accomplished without a major bureaucracy (there are only four, including secretaries, in the Victoria office) and done within half a decade.

Phase II will mean getting a much better handle on province-wide recreational planning, with study of long-term needs and demands, projections and more integrated resource management. "If we can assess the situation correctly," suggests Marshall, "we'll be putting the right type of development on the right location at the right time."

As for the shape of that future, Marshall predicts an increase in recreational forest use but thinks we're over the top in terms of the rate of increase. "The initial boom is over, although we'll continue to see a marked increase in wilderness activity on one hand and the use of more sophisticated recreation machinery on the other. Winter forest recreation will increase faster proportionately than summer activities, and with reduced energy supplies we can look to an increase in shorter range, closer-to-home recreation traffic."

And will the Recreation section be able to handle the increase?

"We don't feel overwhelmed. There are many thousands of miles of backroads, many thousands of lakes, many thousands of every type of recreation asset you care to mention. As for management, our basic thinking has not changed: until such time as sufficient numbers of the user public make sufficient noise to suggest that we're on the wrong track or should be modifying our approach, we'll carry on our middle-of-the-road course. It recognizes many people's rights — from industry to the preservationist. The trick is in the balancing act." ✪

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